MPE Calculation page

MPE Calculator	Garmin		Test Number		090424	
MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.						
	dBi = dB gain compared to an isotropic radiator.					
	S = power density in mW/cm^2			Antenna Gain (dBi)		2.2
		Output Power	dBd + 2.17 = dBi		dBi to dBd	2.17
Tx Frequency (MHz)	2457	(Watts)	0.001849			0.03
				Antenna minus cable (dBi)		2.20
Cable Loss (dB)	0.0	(dBm)	2.67			
Calculated ERP (mw)	1.862			Radiated (EIRP) dBm		4.870
Calculated EIRP (mw)	3.069					
				Radiated (ERP) dBm		2.700

Occupational Limit
5.00000 mW/cm^2

Power density (S) =

$$S = \frac{EIRP}{4\pi r^2} = mW/cm^2$$

[r (cm), EIRP (mW)]

General Public Limit
1.00000 mW/cm^2

FCC radio frequency radiation exposure limits per 1.1310

Frequency (MHz)	Occupational Limit	Public Limit
300-1,500	f/300	f/1500
1,500-10,000	5	1

FCC radio frequency radiation exposure limits per 1.1310

Frequency (MHz)	Occupational Limit @ Tx Freq (mW/cm^2)	Public Limit @ Tx Freq (mW/cm^2)
300-1,500	8.19	1.638
1,500-10,000	5	1

EIRP	Distance	Distance	S
milliwatts	cm	inches	mW/cm^2
3.069	10.00	3.94	0.00244
3.069	9.00	3.54	0.00302
3.069	8.00	3.15	0.00382
3.069	7.00	2.76	0.00498
3.069	6.00	2.36	0.00678
3.069	5.00	1.97	0.00977
3.069	4.00	1.57	0.01526
3.069	3.00	1.18	0.02714
3.069	2.00	0.79	0.06106
3.069	1.00	0.39	0.24423
3.069	0.50	0.20	0.97690
3.069	0.40	0.16	1.52641
3.069	0.25	0.10	3.90760
3.069	0.20	0.08	6.10563
3.069	0.19	0.07	6.76524

Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)
300-1,500	N/A	N/A
1,500-10,000	N/A	0.50